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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,620	12/17/2003	Woong-Kwon Kim	053785-5123	4079

9629 7590 05/23/2005

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EXAMINER

SCHILLING, RICHARD L

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/736,620

Applicant(s)

KIM ET AL.

Examiner

Richard L. Schilling

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5-7-04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. Applicants' letter withdrawing the claim for foreign priority is noted. However, the Oath still claims foreign priority. A new Oath not claiming foreign priority is required.

2. Claims 1-34 are rejected under the first paragraph of 35 U.S.C. § 112 as being broader than the enabling disclosure. The specification fails to show one skilled in the art how to pattern the second electrodes of the instant claims comprising amorphous transparent layers which are light exposed to crystalline states with the non-crystallized portions being removed other than by methods disclosed in the specification on page 24, paragraph 49 and page 25, paragraph 50. The enabling disclosure is limited to using amorphous indium tin oxide (ITO) or indium zinc oxide as the amorphous material which is crystallized by exposure to light and is also limited to using oxalic acid in an etching step to remove the indium tin oxide for indium zinc oxide in the amorphous state which is not crystallized by light exposure. It is also not well known in the art what other amorphous materials may be used and what other etching solutions may be used which form crystalline materials on exposure to light, are transparent and conductive for use in liquid crystal displays and which may be removed without removing crystallized forms thereof. Peng et al. shows that a method of exposing ITO amorphous layers to light to form crystalline areas

with removal of non-exposed areas by oxalic acid as disclosed in applicants' specification is not one of many obvious methods of carrying out the steps of patterning the second electrode of the instant claims but rather is a non-obvious patentable method.

3. Claims 1-34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Nakata et al. and Peng et al. Nakata et al. (see particularly Figure 9, column 12, line 8 - column 13, line 9; column 17, lines 14-15) discloses making liquid crystal devices by forming devices with transistors, black matrices, color filters and transparent patterned pixel electrodes over the color filters. The step of patterning the transparent patterned pixel electrode using exposure of amorphous materials to form crystalline materials as in the instant claims is not disclosed in Nakata et al. However, Peng et al. (see particularly column 1, line 10 - column 2, line 65; column 3, line 34 - column 4, line 11) discloses a simplified method of making patterned transparent electrodes for liquid crystal devices by exposing amorphous ITO films to form crystalline areas and then etching with oxalic acid to remove amorphous areas. The method of Peng et al. is disclosed as a simpler method than the prior art methods of patterning without the problems of residual developer and photoresist contamination and incomplete etching associated with the prior art methods. Therefore, it would be

obvious to one skilled in the art to use the simplified methods of making patterned ITO conductive electrodes of Peng et.al. to make the required transparent patterned pixel conductive electrodes in the liquid crystal display devices of Nakata et al.

4. Claims 1-34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chang et al. '382 in view of Peng et al.

Chang et al. (see particularly column 7, line 35 - column 8, line 19; Figures 3-5; column 5, line 65 - column 10, line 34) discloses forming liquid crystal devices comprising transistors, black matrix, insulating layers, first patterned pixel electrode, color filters and second patterned pixel electrode but does not disclose the method of patterning the second electrode required by the instant claims. However, the method of patterning the second pixel electrode set forth in the instant claims is disclosed in Peng et al. Peng et al. (see particularly column 1, line 10 - column 2, line 65; column 3, line 34 - column 4, line 11) discloses simplified methods of making a patterned transparent electrode for liquid crystal devices by exposing amorphous ITO films to light to form crystalline patterns and then etching the non-exposed areas as in the instant claims. The method in Peng et al. is disclosed as simplified over the prior art without the problems of residual developer and photoresist contamination and incomplete etching associated with prior art

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methods. Therefore, it would be obvious to one skilled in the art to use the patterning methods of Peng et al. to pattern the second electrodes in Chang et al. in order to provide a simplified method without the problems associated with prior art patterning methods as disclosed in Peng et al. This rejection can be overcome by assignee stating that Chang et al. and the instant application were subject to common assignment at the time the invention of the instant application was made. Chang et al. is a common inventor with the instant application.

5. The non-statutory double patenting rejection, whether of the obvious-type or non-obvious-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent.

In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornam*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ 2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321 (b) and (c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78 (d).

Effective January 1, 1994, a registered attorney or agent of record may sign a Terminal Disclaimer. A Terminal Disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-34 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,873,382 to

Chang et al. in view of Peng et al. The U.S. patent claims liquid crystal devices and methods for making them comprising transistors, black matrix, insulating layers, first patterned pixel electrode layers, color filters and second patterned pixel electrodes wherein the second electrodes are patterned. However, the method of patterning the second electrode as required by the instant claims is not disclosed. Peng et al. (see particularly column 1, line 10 - column 2, line 65; column 3, line 34 - column 4, line 11) discloses the method of patterning the second pixel electrode required by the instant claims by exposing an amorphous electrode to light to form crystalline areas and then removing the amorphous, non-exposed areas. Oxalic acid is used to remove the unexposed areas and ITO materials are used as the electrode in Peng et al. Peng et al. discloses that the method of patterning is simpler than the prior art methods and does not produce developer or photoresist contamination and incomplete etching. Therefore, it would be obvious to one skilled in the art to use the methods of Peng et al. to provide the patterning of the second electrode in the claimed invention of Chang et al., U.S. Patent 6,873,382.

6. The prior art submitted by applicants has been considered.

7. Any inquiry concerning this communication should be

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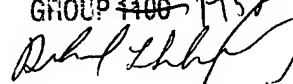
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directed to Mr. Schilling at telephone number (571) 272-1335.

RLSchilling:cdc

May 17, 2005

RICHARD L. SCHILLING
PRIMARY EXAMINER
GROUP 4400-1752

A handwritten signature in black ink, appearing to read "Richard L. Schilling", is written over the printed name and title.